GPIIb-IIIa administrated within 2 weeks before study, CABG within 2 months or PCI within 6 months before study, STEMI undergone thrombolytic undergone within 48 h, unprotected LMCA >50% stenosis, sever coronary calcification, target lesion in SVG, acute STEMI with a primary PCI strategy and contraindication to anticoagulant therapy.
The patients were randomized alternately to intracoronary and intravenous tirofiban. Fifty seven patients were given intracoronary tirofiban and taken as study population and fifty eight patients were given intravenous tirofiban and taken as control population. In the control group, tirofiban was given intravenously as a bolus (10 μg/kg over 3 min) followed by maintenance intravenous infusion at 0.15 μg/kg/min for 36 h. In the study group, tirofiban was administered as an intracoronary bolus injection (10 μg/kg over 3 min) followed by maintenance intravenous infusion at 0.15 μg/kg/min for 36 h. All patients were evaluated at the end of 14 and 30 day period. Flow in the PCI-targeted coronary arteries was assessed by thrombolysis in myocardial infarction (TIMI) flowgrade. Left ventricular ejection fraction (LVEF) was assessed by standard 2-dimensional echocardiography at 14 and 30 days after PCI. Major adverse cardiac events (MACE), such as death, non-fatal myocardial infarction or re-infarction, revascularization of targeted vessels, or worsening left ventricular dysfunction, were also assessed at 14 days and 30 days following PCI. Major and minor bleeding complications within 14 days also evaluated.
Results: Compared with the control group, the study group showed better TIMI flow grades and TIMI myocardial perfusion grades (TMPG) immediately after PCI ($p = 0.016$ and 0.026, respectively). The 14-day composite MACE rate was lower in the study group (3.5% vs 17.5%, $p = 0.030$), but was similar between the 2 groups at 30 days following PCI (7.0% vs 1.7%, $p = 0.350$). The LVEF in the study group was higher than in the control group 30 days following PCI (67.4 ± 6.2% vs 60.7 ± 4.6%, $p = 0.033$). The 14-day bleeding complication ($p = 0.201$) was similar between the 2 groups.
Conclusion: In patients with ACS undergoing primary PCI, intracoronary bolus administration of tirofiban is superior to intravenous bolus injection for improving coronary flow, myocardial perfusion and short-term clinical outcome.

Predictors of no reflow/slow flow during primary percutaneous coronary intervention in patients with acute myocardial infarction

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Background: The aim of treatment for acute myocardial infarction (AMI) is to restore full antegrade blood flow in the infarct-related artery and minimize ischemic damage to the myocardium. However, primary PCI is associated with a serious problem known as the no-reflow phenomenon (thrombolysis in myocardial infarction (TIMI) flow ≤2), which occurs in 5–25% of cases.
Methods: This is a case control study of all consecutive patients with AMI admitted at our institution and underwent primary PCI from August 2014 to February 2015 based on ACC/AHA guidelines.
Results: In the 181 patients who had undergone primary PCI, 47 (25.9%) showed an angiographic no-reflow phenomenon.
Multiple stepwise logistic regression analysis identified that reperfusion time >6 h (OR = 13.844, 95%CI 3.214–59.636, $p = <0.001$), age >60 years (OR = 8.886, 95%CI 2.145–36.80, $p = 0.003$), a long target lesion (OR = 8.637, 95%CI 1.975–37.768, $p = 0.004$), low initial TIMI flow (≤1) (OR = 20.861, 95%CI 1.739–250.290, $p = 0.017$) were the independent predictors of the no-flow phenomenon in our study.
Conclusions: In conclusion, the pathogenesis of no-reflow phenomenon is complex and multifactorial. In the light of our recent study, patients who are likely to develop the no-reflow phenomenon after primary PCI can be predicted by simple clinical and angiographic features.
It is important to avoid or minimize trauma to the vessel, avoid repetitive balloon dilatations and use the shortest stent if possible. Because most patients with AMI have a combination of these factors, combined treatment strategies should be preferred.

Acute myocardial infarction in young adults: Study of risk factors, angiographic features and clinical outcome

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Background: Acute myocardial infarction below 45 years of age constitutes a specific subset of population having different risk factors and clinical features and prognosis as compared to older patients. The protection offered by young age has been slowly taken away by the increased prevalence of risk factors for CHD in adolescents such as smoking, obesity, and lack of physical activity.
Objective: The purpose of this study is to describe the risk factors, clinical features, angiographic patterns and outcomes in AMI in young patients (<45 years) and to compare the same with the older subjects (>45 years) and to study the various complications in 7 days follow up.
Material and methods: The present study was carried out at the LPS institute of cardiology Kanpur. Total 150 cases of acute myocardial infarction admitted in ICCU during 1st January 2014 to 1st January 2015 were enrolled and were categorized in two groups: (a) Group I – age <45 years, b) Group II age ≥45 years. Fasting blood glucose, fasting lipid profile, serial ECGs and the cardiac enzymes (troponin T and I) were evaluated. The risk factors which were studied were hypertension, diabetes mellitus, smoking habits, overweight, waist to hip ratio, hyperlipidemia and family history.
Results: Mean age of the cases was 38 ± 7 and 68.2 ± 5 in group I and II respectively. The male and female ratio was 3:1 in group I and 1.5:1 in group II. Atypical chest pain, sweating, dyspnea and giddiness were less frequently in the younger group with AMI than group II. Younger subjects arriving within 6 h of chest pain was significantly more as in no compared to older subjects (49/65 i.e. 75% vs 38/85 i.e. 45%, $p = <0.05$). Tobacco consumption was the most common risk factor in group I (71% vs 25% in group II). Anterior wall MI, (including lateral MI) was the most common presentation present in 57.64% of the patients in group I vs 45% in group II. The incidence of major complications like congestive cardiac failure, arrhythmias, cardiogenic shock were significantly less in the younger group (50%, 20%, 5%) as compared to (75%, 55%, 15%) respectively in older group. Mortality was significantly lower in group (I) than (group II) 5% vs 20%. Angiography results showed SVD in 48% patients in group I vs 25% in group II. TVD was present in only 3% of the patients in group I vs 27% in group II. LMCA was involved in 3% in group I vs 12% in group II. Normal or nonsignificant coronaries were present in 18% in group I vs 2% in group II. From these results we conclude that Myocardial infarction before age 45 is a disease of men. Young patients tend to have less extensive coronary artery lesions. Very low prevalence of Triple-vessel disease is present. Young patients have more favourable in hospital prognosis than their older counterparts. A sizeable proportion of patients will have normal coronary arteries. Health